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"perverted ingenuity of man—the *a priori* schemes of Kantian and Hegelian transcendentalism," which he characterises as a terrible incubus that has too long enthralled philosophy. Add to this a batch of theological conceptions, which receive putative explanation here, and we shall have approximately the contents of this work. It is a mechanical ontology which has issued from the insight lately offered by science, that most physical phenomena can be represented as modifications of a hypothetical substance called the ether. The ether is the "Universal Substance which exists as an *ens* by itself, which is the absolute basis of all beinghood, which is uncreated, infinite, eternal, without parts, all-pervading, unseen, that cannot be displaced, and withal impersonal." As this ether can be anything and everything, the development of a full-fledged ontology from it and a consequent solution of all possible problems offers no material difficulties. But more significant than being just one of the thousand fanciful and possible developments of this insight, it is not.

T. J. McC.

MENTAL DEVELOPMENT IN THE CHILD AND THE RACE. Methods and Processes
By James Mark Baldwin, M. A., Ph. D., Stuart Professor of Psychology in
Princeton University. With Seventeen Figures and Ten Tables. New York
and London: Macmillan & Co. 1895. Pages, 496. Price, \$2.60.

"Every philosopher who becomes a father," said Max Müller once, "imagines himself *de ipso facto* in possession of the secrets of the origin of language and mind"—or, at least something to that effect. Professor Baldwin justly repudiates this disparaging insinuation, and with commendable heroism and an indomitable zeal for the truth accepts the derogatory epithet of "nursery psychologist" as a badge of honorable service and merit. None the less, Professor Baldwin is perfectly aware of the enormous difficulties and dangers which attend the investigations of this subject, which may be safely said to be still in its infancy. In fact, it is difficult to escape noticing here and there, a tinge of scepticism and despondency in the author's voice, as he lingers before that 'dark backward and abysm' of the early human mind—especially when he is confronted with the appalling diminutiveness of his predecessors' results. If such expressions escape him, however, they have purely a regulative function, and far from despairing of ultimate partial success—for otherwise he would not have written the book—Professor Baldwin is sanguine that rich and valuable results will be obtained, in fact has obtained them. When well into his own work, a cheerful optimism and confidence inspires him.

Professor Baldwin has opened up a new line of inquiry, and pursued it under a new method—"the dynamogenic method," which we shall speak of later. First as to the origin and contents of the book. Professor Baldwin began his work with simple observations on infants, which he published off and on in the scientific periodicals. On coming to the subject of child's imitations, however, especially in relation to volition, he was so deeply impressed with the *genetic* function of imitation as to feel compelled to entertain a widened view of the subject and to work out a theory of

mental development in the child on a new and considerably modified plan. That plan involved the consideration of a doctrine of the race-development of consciousness—the great problem of the evolution of mind. The first chapters, I–VI, are devoted to the statement of the genetic problem, with reports of the facts of infant life and the methods of investigating them, and also to what he calls the mere “teasing out” of the strings of law on which the facts are beaded—principles of suggestion, habit, accommodation, etc. Here the central problem of motor adaptation is considered. “Chapter V. gives a detailed analysis of one voluntary function, Handwriting. Then follows the theory of Adaptation, stated in general terms in Chapters VII. and VIII.; and afterwards comes a genetic view in detail (Chaps. IX. to XVI.) of the progress of mental development in its great stages, Memory, Association, Attention, Thought, Self-consciousness, Volition. So the whole is a whole, the theory resting upon an induction of facts (put before it) and supported by the deduction of facts (put after).” Professor Baldwin emphasises the bearing which his results will have on education and more especially on social or collective psychology, where the genetic theory will find “both its root and its ripe fruitage.” He proposes, however, to take up this aspect in another work which shall bear the sub-title *Interpretations : Educational, Social, and Ethical*, in contrast to *Methods and Processes*, by which the present volume is described.

We may stop to note the author's philosophical position, which falls, he says, under the very indefinite category of “ethical or spiritual idealism.” For example, concerning the explanation of consciousness or reason by evolution, the author takes the stand, now quite common among philosophers, “that the natural history question is not the same as the question of the essence or nature or explanation of mind. Philosophy has its problem just the same, however consciousness arose, “and no amount of evolution theory can settle the problem set by philosophy.” In fact, Professor Baldwin has serious doubts regarding the personal qualifications and even the good intentions of the biologists. “One almost despairs of them !” he says. And, again, regarding their puffed-up disinclination (for their hearts have been made fat and their ears heavy by the fulsome praises of the age), regarding their puffed-up disinclination to listen to “the plaintive note of one who but tries to interpret the wail of the human babe”—he slyly remarks : “But I am not prepared to dispute the point [the possibility of their listening] with any of my readers who find such an expectation quite too optimistic,” All in all, the poor biologist comes in for some pretty hard hitting.

Respecting the advantages which Professor Baldwin cites as belonging to this subject : in the first place, infant psychology meets the urgent needs of mental analysis, in fact, is the only means of testing the truth of our mental analyses ; we find in the child the elements of mind in the simplest human form. Again the phenomena of the infant consciousness are simple as opposed to reflective, and there is also a corresponding simplicity on the organic side. Lastly, in the list of advantages, a more direct application of the experimental method is possible in observing young

children. As to the dangers of abuse of infant psychology it is to be noted: (1) that "we can fix no absolute time in the history of the mind at which a certain mental function takes its rise"; (2) "that the possibility of the occurrence of a mental phenomenon must be distinguished from its necessity"; (3) "that it follows from the principle of growth itself only that the order of development of the mental functions is constant"; and (4) "that discrimination and criticism should be both strenuously cultivated and employed.

In the discussion of ontogenesis and phylogenesis, on the relation of which the motive idea of the book hinges, Professor Baldwin points out what he thinks is a "valuable distinction" for the interpretation of animal action. Taking the four stages of the child's experience of persons not himself; the objective, where the persons are merely sensations; the projective, where they are simply impersonated or individualised but not yet ensouled; the subjective, where he discovers himself; and the ejective, where he makes persons not himself *like* himself;—taking these four stages, he claims that no evident analogy in the animal series has been pointed out by other writers for what is here called the projective stage, but that such phenomena as the "gregarious instinct" cannot be accounted for except on the assumption of such an epoch of animal consciousness. By this distinction Professor Baldwin claims that he eliminates what is called the "psychologist's fallacy," habitual with naturalists.

As to the validity of the biological theory of recapitulation we are invited to note "very marked modifications of the race-record in the growth of the individual." "It is evident that while the organism develops serially in regular stages, yet often the stages in the individual's growth represent directly later stages in the series of animal structures, without having passed through all the earlier stages."

Finally, a word remains as to the author's new method. The methods heretofore employed have involved complex elements and roundabout paths of nervous transmission which greatly vitiate the results. Professor Baldwin has sought "to reach a method of child study of such a character as to yield a series of experiments whose results would be in terms of the most fundamental motor reactions of the infant, which could be easily and pleasantly conducted and which would be of wide application." The organ of reaction selected is the hand, which seems to be the most sensitive, direct, and active of all. He claims that "the infant's hand-movements in reaching and grasping are the best index of the kind and intensity of its sensory experiences." The dynamogenic method is the one which the author has preferred before all others in the experiments to which it is adapted, which he has developed as his own, and which has yielded him rich results. He has collected a list of his new observations in an appendix which shows at a glance their scope and thoroughness. The book is interspersed with much homiletic and educational matter, anecdotes of his children, etc., which relieve the monotony of the psychological development and enforce the author's theoretical positions. Professor Baldwin's book is written in a comparatively untechnical but withal precise style, and although

constituting one of the "sources" of the subject, it is by no means beyond the reach of the average educated reader.

T. J. McC.

GEHIRN UND SEELE. Ein Vortrag gehalten bei der 66. Versammlung deutscher Naturforscher und Aerzte in Wien am 26. September, 1894, von *August Forel*, Professor an der Universität Zürich. Bonn: Emil Strauss. 1894. Pp. 32. Price, M. 1.

The attitude of the myriad workers in the broad domain of modern knowledge, although professedly directed at a common goal, is mostly one of narrowness and hostility, due to mutual misunderstandings. The highest ideals of humanity as incorporated in philosophy, religion, science, ethics, and æsthetics, which are parts only of a harmonious whole, are rent with passions and prejudices, and appear to the dispassionate spectator as mere caricatures of their higher selves. It is to compose these misunderstandings, and to correct this disfigurement that Professor Forel has attempted in the above brief address to throw what light he can on one of the most significant and most knotty of ancient differences, the relation between the brain and the soul. His attempt is made in the form of a *résumé* of the most recent researches in cerebral and nervous physiology with the addition of philosophical criticisms based mainly on the work of Kant and Spencer. He has taken a broad view of the questions and looked at them in their widest significance, making a strong appeal for the recognition and emphasis of their ethical and religious consequences. Especially does he insist upon the necessity of a philosophical elaboration of the results of science, claiming that such results have no significance except as related to the organic whole of knowledge. His reflexions show, he thinks, how intimately the study of the human cerebral soul is connected with all branches of human knowledge, and how eminently fitted it is to guard thinkers and inquirers against the dangers of narrowness and error. They lead, moreover, to a monistic view of the world capable of reconciling true religion and ethics with science, and constitute powerful weapons against the increasing social decadence of the age. The reputation of the author makes the recommendation of this brief pamphlet superfluous; it need only be said that students of all branches will find here important and suggestive hints on a variety of topics.

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WEGWEISER ZU EINER PSYCHOLOGIE DES GERUCHES. By *Dr. phil. Carl Max Giessler*. Hamburg and Leipsic: Leopold Voss. 1894. Pp., 79.

The author emphasises the difficulties which attend experiments with the organ of smell, which in its present neglected state does not seem very well fitted for the reception of delicate olfactory impressions. Disclaiming the intention of writing a complete psychology of smell, he discusses the effects of olfactory impressions upon the mental and physical life of individuals, showing that the psychical life of whole classes of lower orders of animals is bound up with their sense of smell, and that for the spiritual life of man the sense of smell is of an importance not to be under-